Cold Springs Fire
Long Term Suppression Strategy
and
Implementation Plan

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Cold Springs Fire Long Term Suppression Strategy and Implementation Plan

LTP Team

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Long Term Suppression Strategy and Implementation Plan

Purpose and Objectives

The purpose of the Long Term Suppression Strategy and Implementation Plan (LTP) is to assist in the long-term management of the Cold Springs Fire. The fire is currently 7,956 acres and burning on private, state, tribal and federal lands. This plan builds upon the leader's intent of the agency administrators from the Yakama Nation, Bureau of Indian Affairs (BIA), Washington State Department of Natural Resources (DNR) and the Gifford Pinchot National Forest (GPF). This plan is based upon the objectives outlined in the Wildland Fire Situation Analysis (WFSA) and is a guide for designing a safe, flexible, efficient and cost effective workforce until a "fire ending event" occurs or the plan is updated.

This plan is designed to assist in decision making but it cannot replace the fire ground decision maker or the agency administrator. It is essential that this plan be updated continually as weather changes, fire spread continues, new information comes to light and time passes.

Specific objectives from the Letter of Expectation for the LTP team by Lynn Burditt, Acting Forest Supervisor, Gifford Pinchot National Forest:

Objective: *Develop a long term suppression strategy and implementation plan for the Cold Springs Incident.*

The primary guidance for developing strategies for implementing the long term plan shall be firefighter and public safety.

Smoke implications are also important factors to be considered in developing long-term strategies.

To assure success of the suppression strategy as outlined in the WFSA (Alternative A):

1. *The long term plan should include:*
   -the appropriate management structure for the fire
   -triggers that identify suppression action(s) to take when and if needed (these may vary by agency/land manager)
   -triggers for ordering needed suppression resources
2. *Contingencies to support all proposed management actions*
3. *Alternative base camp/ICP locations to eliminate conflict with the resumption of school*
4. *Mop-up standards*
5. *Internal and external communication plan*
6. *Cost estimate for the fire, up to BAER*

Objectives may change over the life of a long-term wildland fire, and when they do, the LTP may also need to be changed.

The objectives identified in the WFSA are as follows:

-Protect communities of Glenwood and Trout Lake
-Protect Mt Adams allotment
-Protect timber resource values on state, BIA and private land on east side of fire
-Protect scenic values at Bird Creek Meadows and Hellroaring Meadows
-Protect Gotchen Guard Station, Morrison and Cold Springs Shelters, Island Camp Shelter, DNR Campgrounds

While developing the plan, the LTP team identified training opportunities as a secondary objective of the Long Term Plan and several trainees have been identified to fill positions on the Type 3 IMT.

Fire Ecology and History

Lightning caused fires are not uncommon in the area of the Cascade crest. Prior to European settlement, it was these fires that shaped the successional dynamics of the landscape in grand fir (*Abies grandis)* forests in the area, including the site of the Cold Springs Fire. Low intensity surface fires encouraged dominance by fire resistant species such as ponderosa pine *(Pinus ponderosa),* western larch *(Larix occidentalis),* and Douglas-fir *(Pseudotsuga menzesii).*

Significant changes to forest structure and composition have occurred since European settlement. The current forest conditions, resulting from both a century of fire suppression and extensive selective harvesting of large old growth ponderosa pine, vary greatly from the historic condition. Existing vegetation has shifted from the fire resistant to less fire tolerant species and the challenge of managing fire has become increasingly complex.

The composition and structure of this forest has made it vulnerable to attack by Western spruce budworm (*Choristoneura occidentalis).* The first recent budworm outbreak occurred in 1985, and the eastern portion of the Mt. Adams Ranger District known as Gotchen has been repeatedly hit. The result is large pockets of dead and dying trees with increasing concentrations of snags and ground, surface, and ladder fuels as larger trees die and fall and thickets of smaller dead grand fir are left as standing.

Though typically suppressed when they are small, fires are frequent to the area. The Gifford Pinchot National Forest has experienced 28 large fires (over 50 acres) since 1970. The Cold Springs Incident will be the 29th and largest fire in that time period. Ecologically speaking, fire induced succession should be viewed on a longer time scale. The Gifford Pinchot National Forest has experienced many substantial burns both from natural ignition as well as escaped slash burning since the turn of the 20th century. The largest of these fires was the Yacolt Fire in 1902. It was 238,928 acres with at least 16 reburns between 1910 and 1924 as well as the 48,000 acre Rock Creek Fire of 1927 and the 208,000 acre Dole Fire of 1929. Eight other major fires have been documented up through 1952.

In more recent history, the three large fires that the Mt. Adams Ranger District has experienced since 2000 have all occurred on the east side of the district near Mt. Adams. The Salt Creek Fire of 2001 (318 acres) was about three miles northwest of the Cold Springs Fire origin in the Mt. Adams Wilderness, while the McDonald Fire of 2004 (80 acres) was less than a mile away. These smaller incidents, though large compared to other local fires over the past few decades, were indicators of the potential for a large fire like Cold Springs. Though Cold Springs is the largest fire experienced in the area in quite awhile, it was ecologically anticipated based on the fire return interval and is within the size range of a typical large, stand-replacing fire.

Cold Springs Fire Narrative

The Cold Springs Fire began as a hold over lightning strike discovered late on 7/12/2008. Firefighters from the Mt. Adams Ranger District initial attacked the fire early on 7/13/2008. The fire transitioned into a crown fire and the initial attack forces were unable to contain the fire. The fire threatened a high use recreation corridor and the forest's emphasis was on ensuring public safety. Tactical air support combined with sound decision making allowed the forest to successfully evacuate all civilian personnel. There were no injuries to the public or firefighters during the evacuation.

The fire continued to burn aggressively and quickly crossed jurisdictional boundaries onto Yakama Indian Nation lands, Washington State Department of Natural Resources administered lands and private land. Based upon the complexity of the incident, the Forest ordered a Type II Incident Management Team (IMT). Mark Rapp's Central Oregon IMT took command of the fire on 7/14/2008. A Delegation of Authority calling for full perimeter control was issued by all three agencies to the IC.

The IMT was very successful in containing the fire and by 7/19 the fire's forward rate of spread had been halted. Approximately 25 miles of dozer line, hand line and cold trailed black edge encompass the fire. The largest interior islands have been blackened. The entire perimeter is being mopped up to a minimum standard of 300 feet. The team was able to begin releasing resources on 7/19 and a gradual demobilization will continue over the next few days.

The perimeter control strategy was effective yet costly. This LTP will be the basis for the continued management of the fire. The commitment of resources, addressing smoke concerns, suppressing new fires and sharing information with the public will continue to place a burden on the agencies involved with the Cold Springs Fire. A strong contingent of resources will be left behind (see Appendix E) during the transition to monitor the fire, continue mop-up and begin rehab.

Summary of the Fire Risk Assessment

Most of the growth of the Cold Springs fire occurred in two burn periods, on July 13 and 14. Weather conditions on this day were dominated by a surface low pressure, creating a warm, dry, and unstable, but not particularly windy fire environment. The combination of heavy downed fuel and relatively closed canopies resulted in periods of active crown fire, with modeled crown fire rates of spread of more than ¼ mile per hour. In addition, spotting distances of up to ½ mile were reported (modeled fire behavior runs predict up to 1/3 mile), adding to the overall rate of spread. (See fire behavior and risk assessment appendix for model runs and more detail).

The western portions of the fire burned most cleanly, with few unburned islands remaining, especially in the areas west of the A.G. Aiken Lava Bed. Further east, more unburned areas remain, and there has been concern on the part of fire managers and agency administrators that these unburned islands would present season-long risks to the containment lines. Steadily drying conditions under light winds over the past week have allowed some of these unburned areas to burn, some with the encouragement of active lighting by fire crews and aircraft, but there remains the potential of these areas becoming active again throughout the season.

The greatest risks to the containment lines are on the eastern and northern portions of the fire. The southern perimeter tends to be the downhill perimeter, so new fires outside of the lines would tend to burn back uphill towards the fire or flank the lines under prevailing westerly winds. The western portion appears to have burned hard up to the containment line, so there is less risk of crowning and new spots to the west. The northern edge of the fire, particularly west of the Divison D/E break (near Bird Creek), does not have a hard black burn up to the edge, and there remains the risk of fire creeping or spotting beyond the current perimeter and moving uphill towards Mt. Adams or flanking the fire to the east.

On the northeast and east perimeter, forests are a mix of cutover and regenerated cut units, along with a significant and continuous stretch of live and spruce budworm killed forests. New fires that start here under conditions similar to July 13 and 14 could be expected to have crown fires moving 2-3 miles in one burn period, towards the Hellroaring drainage and the Klickitat River. The cutover units would have little to no crown fire, but ground rates of spread equivalent to the crown fire rates in adjacent standing forest.

Season Ending Date:
An analysis of weather and fire occurrence data indicates that 90% of fire seasons in south-central and southwestern Washington end by the first week of October. For 2008, the regional Predictive Services forecast is for a fire season that extends later into the fall than normal. Therefore, local fire managers can expect to be managing the Cold Springs fire at some level for another 8-10 weeks.

The environmental conditions that will affect future fire behavior are; poor night time humidity recovery, an unstable air mass over the fire, and windy conditions. As identified in the Regional Forester Review of the Cold Springs Fire, poor night time humidity recovery was a significant contributor to the rapid fire growth on July 14 and 15. It seems likely that poor humidity recovery would be a precursor to the next fire growth day on the Cold Springs Fire. The team also believes that the unstable atmosphere made a significant contribution to fire spread on the 14th and 15th. As with humidity recovery it could be a precursor to future major spread events. Windy conditions from either marine push winds or dry cold front passages present the greatest wind related risk. Of secondary concern would winds that channel down the drainages of Mt. Adams in the evening. Terrain influenced winds and bad fuel conditions make Hellroaring Creek problematic if fire becomes established. The historic weather data did not show any East Wind Event risk.

Identified Values at Risk
Values at risk due to the Cold Springs Fire outside of the perimeter considered in this plan include the following:

- Residences in and around Trout Lake and Glenwood
- Cultural and timber resources on Yakama Nation lands
- Industrial timber interests on private and DNR administered lands
- Shelters and campgrounds
- Social and economical impacts to the community

Validation

The current WFSA is valid. The expected fire duration and extent along with social and political concerns may require amending the WFSA over time. A Regional Forester Review Team concurred with the selected strategy on July 17th.

As of July 20, 2008 the total suppression cost of the fire was more than $5 million and the size near 8000 acres. The selected WFSA alternative, Alternative A Ditch Road, allows for $27 million and up to 41,600 acres in size. The current strategy, aggressive full perimeter control, has been very successful. No significant perimeter growth is currently anticipated but the threat for escape will remain until significant precipitation occurs.

Communication Plan

The Communication Plan includes a strategy to keep partners and the public identified in Appendix C informed through a clear two-way communication strategy. Key contacts may need to be updated as the fire changes over space and time.

Administrative Issues Identified and Recommended Mitigation Actions

Issue: Smoke and the potential impact to surrounding communities over time.

Action: Monitor smoke volume, smoke movement, and smoke accumulations for the communities of Trout Lake and Glendale. Monitoring could take the form of observations and record keeping for each day. An increase in public inquiries about smoke, or obvious smoky

conditions, as identified in the Mitigation Plan (Appendix A) would be the trigger for preparing a Fire Information Update to respond to the public proactively.

Smoke Monitoring Resources

- The basics of the Air Quality Index can be found at: http://www.airnow.gov/index.cfm?action=static.aqi.
- Air Quality Index is available for Yakima and Toppenish. http://www.yakimacleanair.org/
- Air Quality Index is also available for The Dalles, Oregon.
- http://www.deq.state.or.us/aqi/index.aspx. Both sites had good air quality ratings on the morning of July 21, however light smoke was visible and the smell of smoke was noticeable at Trout Lake; therefore the presumptive rating for Trout Lake vicinity would be a moderate.
- The Regional Air Quality Program lead for the Forest Service is Jim Russell 503 808-2956. The Yakama Nation has air quality expertise as well, there may be a collaborative opportunity.
- Air quality sampling hardware (EBAM) may be available through the Boise cache. Air quality data is uploaded via satellite and available on the web in real time.

Issue: Additional fires

Action: New fires are possible. Resources assigned to the Cold Springs Fire may be available to assist the host units. Conversely, local initial attack resources may be available to assist the Cold Springs IMT. This type of relationship is a force-multiplier and a common practice.

Issue: Tourism and Recreation

Action: The Communication Plan addresses the key messages to be shared with the local businesses and the public. Lifting of area closures will be at the discretion of the agency administrators in conjunction with IMT recommendations. Public and firefighter safety remain the number one objective of the incident.
Action: Reduce public closure area to the area east of the Cold Springs Road. Monitor fire activity on west edge of fire, close road again if Management Action Point 3 is reached.

Issue: Commitment of agency personnel

Action: Duty schedules have been developed to ensure work/rest guidelines are followed. Additional personnel can be ordered as needed through dispatching channels.

Issue: Resumption of harvesting activities in the fire area

Action: The threat to DNR administered industrial lands in the fire area has been greatly reduced. Resumption of activities is at the discretion of DNR.

Issue: Cost of managing the incident

Action: A cost threshold is identified in the current WFSA. Estimated costs are expected to be below the WFSA threshold. The development of the LTP is a major step in managing costs.

Management Action Points

Management Action Points (MAP) are not necessarily "points." A MAP may be a definitive line or merely a threshold. The associated management action is triggered by the fire either reaching a geographic area or socio/political threshold. (See Appendix A: Cold Springs LTP Management Action Plan). The Management Action Points have associated planned management actions. These management actions are not automatically implemented when the MAP is reached. Management actions can include on-the-ground actions as well as administrative actions that include:

- Checking, directing, or delaying actions to affect fire spread
- Road/area closures, public notification of impending smoke impact

Management actions are considered only if they can be done safely, will be effective, resources are available, the cost of the action is justified by the value at risk and the action is practical and practicable.

Monitoring

Weather is a key component for monitoring the fire potential and reaching MAPs. When significant conditions change or unforeseen events occur this plan can be changed.

Seven Day Significant Fire Potential products from the NWCC should be monitored daily. Track the fuel dryness for both PSA C1 and W2. Watch for "high risk" Events, specifically windy conditions or unstable air mass triggers. The web link is - http://www.nwccweb.us/content/products/fwx/guidance/dl.pdf.
The response to the threat of unstable air mass or windy conditions would be a thoughtful reassessment of the fire conditions.

- What will the available fuel conditions be at the time of the weather event?
- Where are the current areas of open flame?
- Where are the known heat concentrations relative to receptive fuels outside the perimeter?
- Can the threats or risks be mitigated in the short term through additional effort?
- What suppression resources are currently engaged?
- What additional resource could be added?
- Would additional lookouts and monitors be prudent?
- Is there a fire information opportunity associated with the weather event?

The most severe weather events will be included in a Fire Weather Watch or a Red Flag Warning by the National Weather Service.

Fuel Moisture Trends

Monitor by sampling fuel moisture levels in and around the fire. The benefit to the units would be tracking of fuel moisture trends and not relying on the algorithms of the RAWS. Data would be collected specific to the Cold Springs fire, and in the vegetation types and in the fuels size classes that are most important to local fire managers. We will not propose that there are fuel moisture thresholds that would trigger specific implementation actions, but they might become apparent as the collected data is matched to specific fire behavior events.

Incident Management Organization

A Type 3 IMT will manage the Cold Springs Incident for the near term. The size of the organization and the key positions are identified in Appendix E. The objectives and the strategy of the team will remain unchanged; firefighter and public safety will be the priority while the team continues to work toward the objectives outlined in the WFSA. The team will focus on perimeter control, implementing rehabilitation plans and providing additional initial attack support as requested by the agencies.

Training opportunities should be pursued, when available, for overhead positions. Approximately 150 personnel will constitute the identified Type 3 organization. The IMT3 Command and General staff should continue reviewing the organization and adjust resources accordingly.

Finance
An existing cost-share agreement, based on Percent of Effort, as identified in the Pacific Northwest Incident Management Guidelines, is in place. The agreement may require updating based on changed conditions or validation of the plan, if this is appropriate.

Communications
The Gifford Pinchot Forest net covers the fire area (Flat Top repeater) and it will serve as the command frequency. The GPF air-to-ground frequency will cover air operations. Tactical channels are available.

ICP/Base Camp will remain at its current location through the first week of August. The need for an additional ICP and/or Base Camp will depend on a number of variables. If the perimeter holds, there may be an opportunity to eliminate ICP and Base Camp and manage a much smaller organization out of a host agency facility. If the fire remains active, or perimeter growth is experienced, the most likely ICP/Base Camp will need to be located on the east side of the fire.

Future ICP and Base Camp locations - east side:
Glenwood High School
Glenwood DNR WORK Station (ICP only)/Glenwood Rodeo Grounds (Base Camp only)

Future ICP and Base Camp locations - west side:
Mt. Adams Horsecamp (ICP/Base Camp)
Jonah Ministries (ICP/Base Camp)

Organization
The proposed organization is outlined in Appendix E. This organization was developed based on the recommendations of Mark Rapp's IMT and the objectives of the LTP.

Cost

Based on projections provided by the Central Oregon IMT's Finance Section and the LTP Team, the proposed organization will cost approximately $200,000/day. It is anticipated that the cost/day will decrease to $150,000/day after 7-14 days and further decrease over time. Aircraft use is the most variable of all of the costs. Assistance on new initial attack fires needs to be clearly documented to keep the cost of the Cold Spring Fire accurate. Based on a 30 day estimate, total cost for the incident is $15 million. Additional cost estimates associated with MAPs can be found in Appendix A. Graphs and supporting data are attached at the end of this document as Appendix I.

Recommendations for the Agency Administrators

The LTP team believes that the Cold Springs Fire has a low to moderate potential to escape the existing control lines. We base this assessment on the following:

- It is still early in the fire season – typical fire seasons in the Pacific Northwest peak in mid-August, and a late season extending into October can be anticipated this year.
- The fire burned in a pattern that resulted in a clean burn near the origin, but a much spottier burn to the north and east. As a result, the northern and eastern perimeters will less secure, even with intense mopup. This is the area that has the largest continuous expanse of downwind fuels.
- The higher elevations of the fire include subalpine fir, a fuel type that is notorious for frustrating firefighters. Seemingly quiet areas of a fire can become active quickly, with torching and spotting from subalpine fir trees with branches brooming at ground level.

The fire still requires attention and work that can be done safely, but due to favorable weather and the interagency efforts of fire crews, managers, and the Central Oregon IMT, the complexity of the incident has been reduced substantially….

The fire still requires attention and there remains productive work that can be safely accomplished. The complexity of the incident has been reduced, mainly due to the efforts of the interagency firefighters and the members of the Central Oregon IMT. Transitioning to a smaller, flexible workforce with a solid plan that can quickly react to any threats along the perimeter is the next logical step in managing the fire. The remainder of the fire can be allowed to burn-out naturally. If needed, a rapid build-up of additional firefighting resources can be initiated if the fire reaches any of the identified management action points. This approach allows management to meet objectives while managing risk in a logical and cost-effective manner. This plan must be reviewed weekly or immediately after any significant change occurs that may challenge the integrity of the plan. Continuation of During Action Reviews (DAR), used to validate leader's intent and to ensure the current strategy and objectives of the incident, can be used as a mechanism to adjust the LTP.

Agency Administrators' Signatures (optional)

_____

Lynn Burditt, Forest Supervisor (Acting) Date
U.S. Forest Service Gifford Pinchot National Forest

_____

Gary Berndt, Assistant Region Manager, Southeast Region Date
Washington State Department of Natural Resources

_____

Steve Andringa, Natural Resource Director Date
Yakama Indian Nation

_____

Steve Wangemann Date
Bureau of Indian Affairs

Appendix A: Management Action Points (MAP)

07/20/08

All actions based on a Type 3 IMT assigned to the incident

Management Action Point (MAP)	Location/ Condition	Management Intent	Action	Resources Suggested	Estimated Cost/day
MAP 1	**PERIMETER BREACH/ INITIAL ATTACK SUPPORT**	-Public/firefighter safety -Minimize fire perimeter growth	-Utilize IMT3 resources and district/forest resources for IA on fire perimeter or new start -Order additional tactical air -Open Troutdale Tanker Base	-Resources on-scene -District/forest IA -Air Attack/Lead Plane -2 T1 Air Tankers	$20,000+
MAP 2	**HELLROARING** Fire spots across containment lines along the north/northeast perimeter. Fire cannot be contained with resources on-site and tactical air.	-Public/firefighter safety -Recognize change in incident complexity	-Order full Type II team or appropriate level of management. -Establish anchor point from main fire w/existing resources -Prepare for long term event	-10 Type 1 crews -2 Type 1 helos -2 Type 3 helos -4 dozers -2 Task Force engines	$500,000+ (cost will escalate rapidly)
MAP 3	**MCDONALD RIDGE** Fire spots across containment lines along the north/northwest perimeter. Fire cannot be contained with resources on-site and IA air.	-Public/firefighter safety -Check fire spread to west -Hold McDonald Ridge	-Close Cold Springs Road to public access, evacuate recreation facilities. Fire and hold McDonald Ridge) -Increase Public Information *Secondary Action (McDonald Ridge fails):* -Order Type II Team	-Resources on-site *Secondary Action: (McDonald Ridge fails):* -Order resources in MAP 2	$150,000 $500,000+

Management Action Point (MAP)	Location/ Condition	Management Intent	Action	Resources Suggested	Estimated Cost/day
MAP 4	**BUNNELL BUTTE** Fire spots across containment lines along the south/southwest perimeter. Fire cannot be contained with resources on-site and IA air.	-Public/firefighter safety -Check fire spread to south	-Monitor fire behavior -Increase Public Information -Place Type II team on stand-by if threat is significant. -Use direct attack when conditions allow -Use smoke forecasts to alert public -Utilize Gotchen fuels reduction projects as needed	-Resources on-site -Order additional dozers/aircraft/type 1 crew(s)	$30,000
MAP 5	**WORST CASE** A major escape or new start occurs along the north/northeast perimeter. All anchor points are lost and a new strategy is required to manage the fire.	-Public/firefighter safety -Manage an incident of regional significance -Manage long term fire	-Complete complexity analysis -Prepare for fire at the Klickitat River within two days. See attached recommendations for Worst Case Scenario Planning	Full Type 1 or 2 team compliment.	$1 million
MAP 6	**CRITICAL FIRE WEATHER THRESHOLD FORECASTED** Identified critical weather as identified in the LTP criteria reached or forecasted	-Provide necessary resources to respond to a critical weather/fire event.	-Identify MAP affected (wind direction) and order the necessary resources, through dispatch channelsagencies, to the meet management intent	Reference MAP -IC to identify resources needed	dependent
MAP 7	**SMOKE** Volume of smoke increases and impacts adjacent communities	-Inform the public on fire status and smoke impacts	-Mobilize PIOs to work trap lines identified in plan -News releases on smoke impacts and avoidance -Conduct community mtgs	-3 PIOs -Local district office support	$1,500

Management Action Point (MAP)	Location/ Condition	Management Intent	Action	Resources Suggested	Estimated Cost/day
MAP 8					
MAP 9					
MAP 10					

Appendix B: Fire Behavior/ Predictive Services Products

FIRE BEHAVIOR AND RISK ASSESSMENT APPENDIX
Cold Springs Fire, GPNF

Fuel Models in and adjacent to Cold Springs fire perimeter

Division	Fuel Models
A	5,8,10,11,12
B	10,11,12
C	10,11
D	5,8,10
E	5,8,10

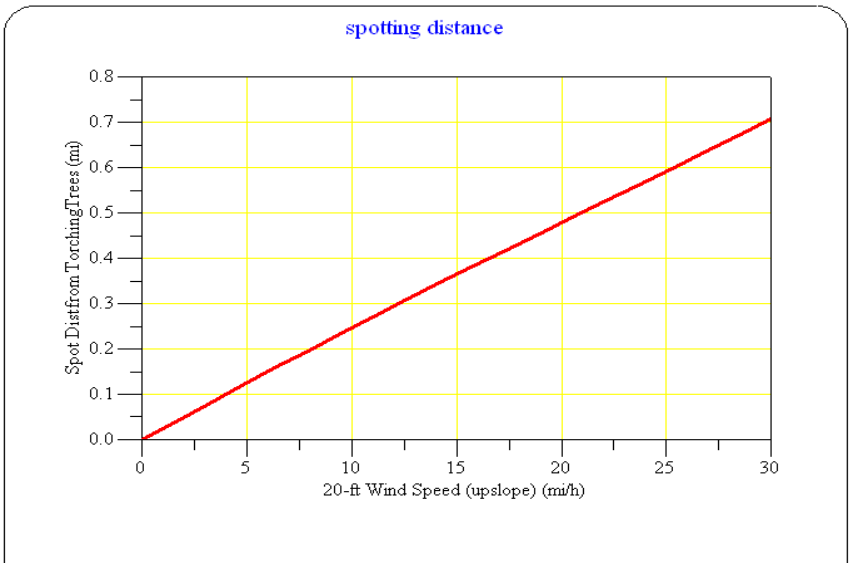
Fire Behavior Runs for midsummer conditions:
Inputs: temp 75F, rh 25%, 20ft winds 12mph, 50% canopy cover, 75ft tall grand fir trees, open stand, 1hr 5%, 10hr 6%, 100hr 7%, live fuel moistures 125%, 30% slope, 500ft ridge to valley elevation difference over .5mi.

Fuel Model	Rate of Spread	FL
5	10.8ch/hr	4.2ft
8	1.1	.8
10	4.3	3.8
11	3.6	2.8
12	8.2	6.6

For all fuel models – probability of ignition 62%, spotting distance .3mi
Emphasizes that in slash and brush areas, spots can grow rapidly and exceed capability of hand crews alone to contain.

Evaluation of effect of 20ft windspeed on spotting distance:
Inputs: 50% canopy cover, 2 75ft tall subalpine fir trees torching from a ridgetop, open stand

20ft Windspeed	spotting distance
5mph	.1mi
10	.2
15	.4
20	.5
25	.6
30	.7

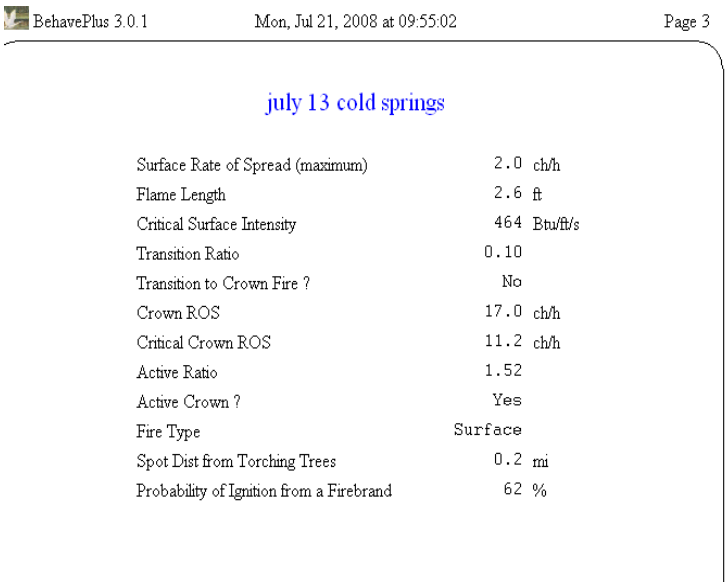


Results: the 300ft mopup standard is less than .1mi, so trees torching from the interior could spot outside of the line even with very light 20ft winds.
The results emphasize the importance of mopping up beyond 300ft, especially under intact crowns, and getting a clean burn of the heavy fuels, raising canopy base height, etc. It is important to remain diligent about monitoring reburning or burnout of islands, as medium to long range spotting is possible. Monitor windspeed predictions, and monitor key RAWS sites close to fire.

BEHAVE run for conditions during afternoon of July 13.

We modeled fire behavior in the area burned during the initial and extended attack (July 13-14), under weather conditions recorded on site by the IA crews.

Inputs: temp 77F, rh 25%, 12mph 20ft winds, fuel moistures 5/6/7% (1hr/10hr/100hr)The modeled surface fire spread and flame lengths were within the capability of ground crews (2.0 chains/hr and 2.6ft flame length), but once crown fire was initiated the rates of spread were much greater (17ch/hr). This spread occurred under very little wind (eye-level winds of 3-7mph), but the dry and unstable atmospheric conditions were conducive to this type of fire behavior.



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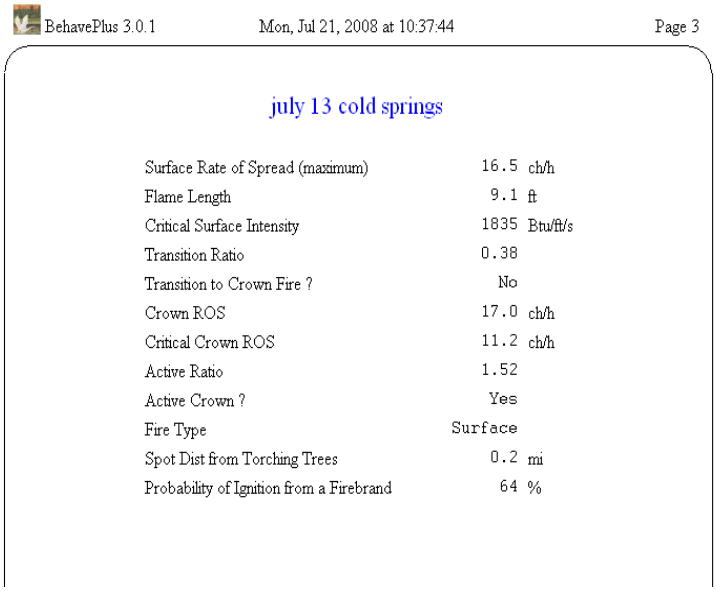
Surface Rate of Spread (maximum)	2.0	ch/h
Flame Length	2.6	ft
Critical Surface Intensity	464	Btu/ft/s
Transition Ratio	0.10	
Transition to Crown Fire ?	No	
Crown ROS	17.0	ch/h
Critical Crown ROS	11.2	ch/h
Active Ratio	1.52	
Active Crown ?	Yes	
Fire Type	Surface	
Spot Dist from Torching Trees	0.2	mi
Probability of Ignition from a Firebrand	62	%

Fuel Model 8 during IA



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july 13 cold springs

Surface Rate of Spread (maximum)	16.5	ch/h
Flame Length	9.1	ft
Critical Surface Intensity	1835	Btu/ft/s
Transition Ratio	0.38	
Transition to Crown Fire ?	No	
Crown ROS	17.0	ch/h
Critical Crown ROS	11.2	ch/h
Active Ratio	1.52	
Active Crown ?	Yes	
Fire Type	Surface	
Spot Dist from Torching Trees	0.2	mi
Probability of Ignition from a Firebrand	64	%

Fuel Model 10 under IA conditions

RISK ASSESSMENT

The values most at risk are those east and northeast of the current fire perimeter – private and tribal forest lands in a mixture of recent treatments and continuous forest with a significant component of recently-killed overstory. Fire behavior similar to that experienced during initial attack could be expected, with crown fire spread rates exceeding ¼ mile/hour (perhaps as much as two miles per day, plus spotting). The recently harvested areas would give much faster rates of spread and flame length (16ch/hr and 9.1ft, respectively), exceeding the capability of ground forces without the air support. Under these fuel and weather conditions, a fire escaping on the northeast or east end of the current perimeter could be to the Klickitat River within 2 burn periods.

Season Ending Estimates
By Predictive Service Area (broad scale)

NWCC Predictive Services Section has developed a new season ending product that is available this year. Season-ending date estimates utilizes the Predictive Services 7-Day Significant Fire Potential Product. Given that the Product determines the probability of a significant fire occurring, based on historical dryness levels and historic fire occurrence, the analysis results assume end-of-season when the Product observed "green" (<1% probability of a significant fire event) for three or more consecutive days, and where periods of green were never separated by more than a single yellow day (3 to 5% probability of a significant fire event).

The outputs of the season ending analysis for Predictive Service Area C1: East Slope Washington Cascades and Predictive Service Area W2: Northwest Oregon/Southwest Washington are provided in the table below.

The predictive service weblink to the full product content is available at: ftp://ftp.nifc.gov/Incident_Specific_Data/PACIFIC_NW/!NWCC_INFO/!NWCC_LTAN_FBAN/PSA_DATA/PSA_W2/SeasonEnd_Slowing_Data/.

The Cold Springs fire has a 90% probability of a season ending event by the first week of October, based on the Predictive Services product.

	Median Probability	50 % Probability	90% Probability
NWCC Predictive Services PSA C1	September 28		October 8
Predictive Services PSA W2	September 26		October 3
Signal Peak RAWS		September 20	October 25
Trout Creek RAWS		September 6	September 29
Dry Creek RAWS		August 28	October 7

By RAWS (site specific scale)

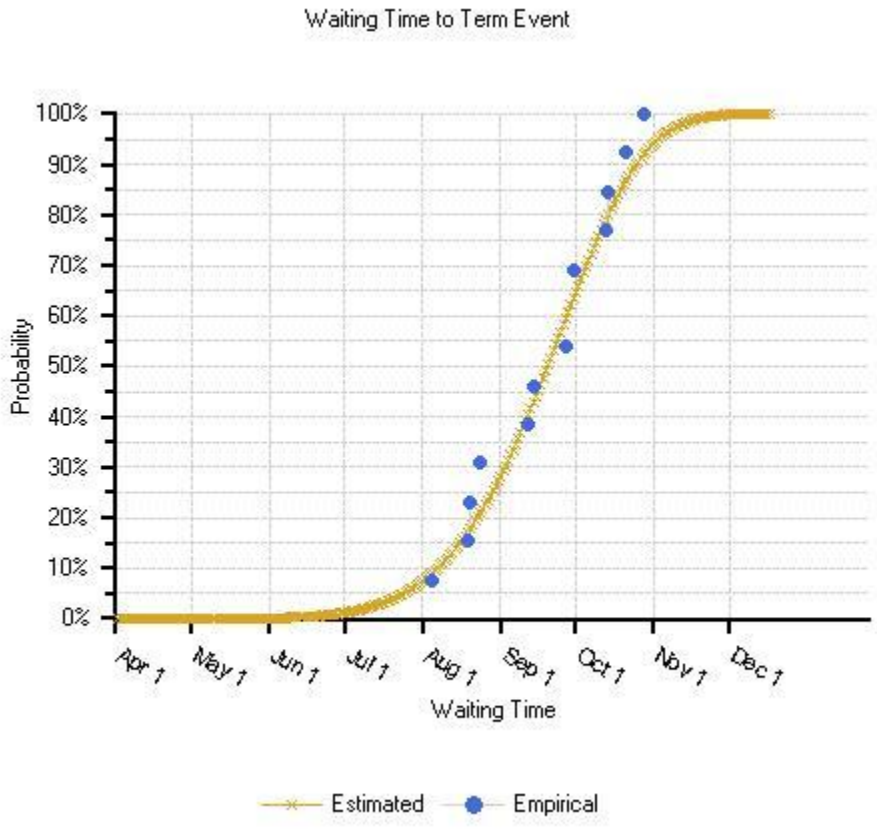
The assessment team also used standard Fire Family Plus and RERAP programs to estimate the end of season. All three RAWS suffer from the same issue, incomplete data record. Stations may be missing early season data (station not running until mid summer), or the station has no data for an entire year. Review of the raw data and use of event selector tools show numerous "bad" values in the data. Therefore confidence in the data is not high.

Using the available data the season ending probabilities were calculated and for all three stations and are displayed above.

Term Report

Season Start Date:	4/1
Alpha Value:	6.4
Beta Value:	0.0055
R Squared:	
File name:	Signal Peak.trm

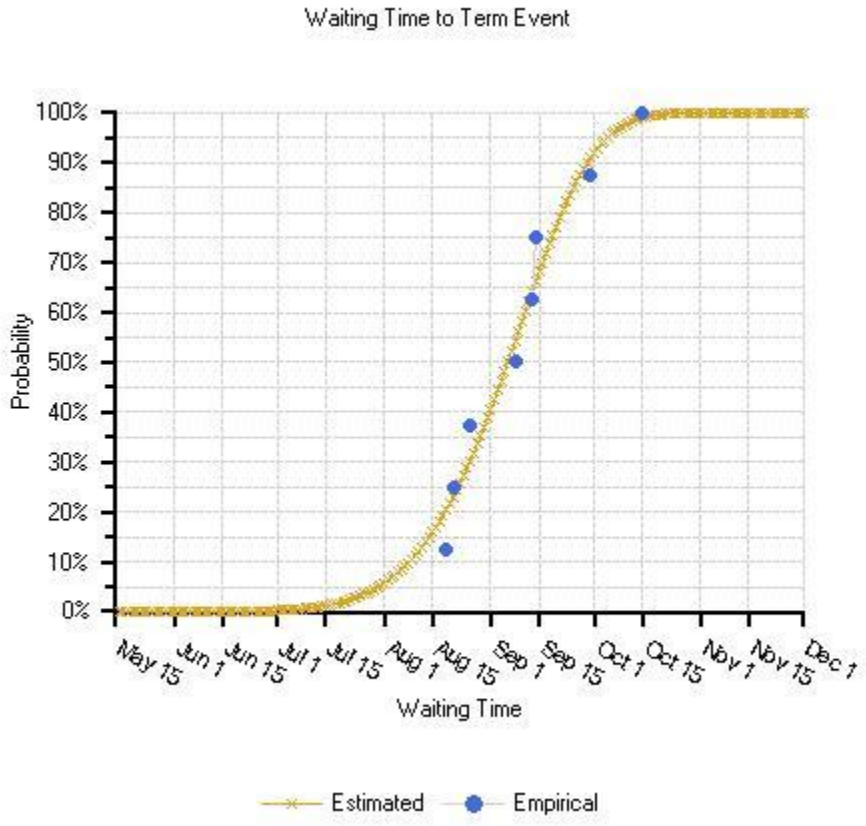
Term Date Comments
Signal Peak Station
Small data set with only 13 years of data available.
Event dates are from Fire Family Plus event locator feature. Two conditions must be met: precipitation greater than .5 inch concurrent with ERC value below the 70th percentile.(10 years met the criteria.)
Three end of season dates were based on ERC alone without a precip. event. 70th percentile threshold.
The probability of a season ending event is 50% on September 20. The probability doesn't reach 90% until October 25th.



Term Report

Season Start Date:	5/15
Alpha Value:	6.5
Beta Value:	0.0083
R Squared:	
File name:	Trout Creek.trm

Term Date Comments
Trout Creek RAWS
Only 8 years of data available. Review of the data detected numerous erroneous values. Confidence in the output would be low.
Season end events where selected for precipitation greater than .5" and ERC below the 70th percentile. 6 of the 8 precipitation events show percipitation greater than 1.0.
50% probability of season end by September 6, and 90% probability by September 29.

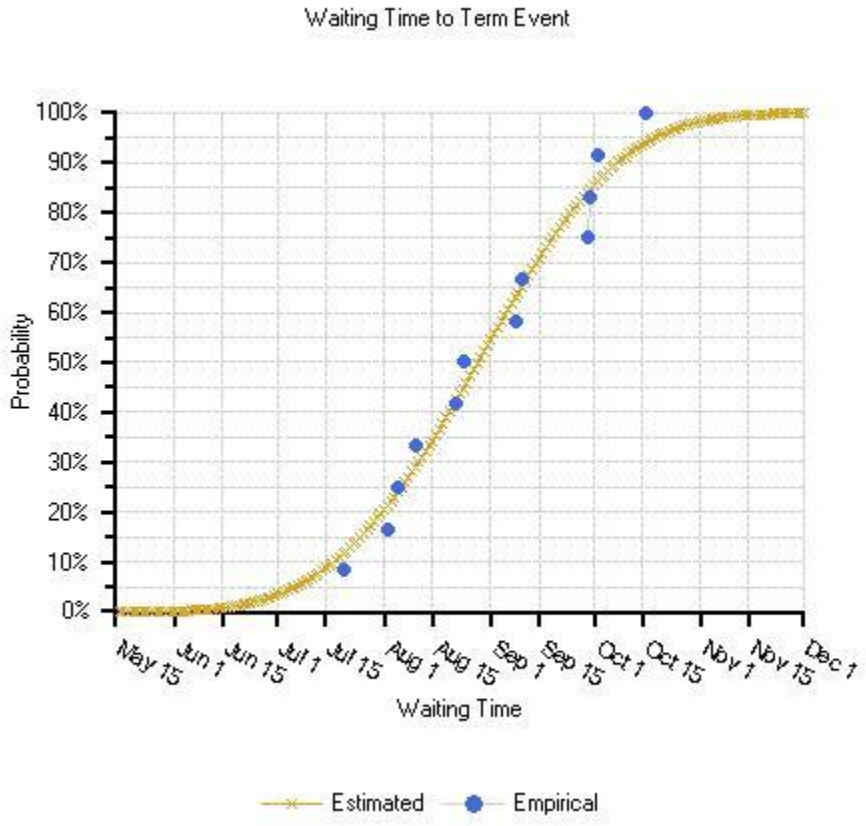


Term Report

Season Start Date:	5/15
Alpha Value:	3.7
Beta Value:	0.0086
R Squared:	0.97
File name:	Dry Creek.trm

Term Date Comments

Dry Creek Station
Small data set with only 12 years of data available.
Event dates are from Fire Family Plus event locator feature. Two conditions must be met: precipitation greater than .5 inch concurrent with ERC value below the 70th percentile.
For 6 of the 12 season end dates selected the precipitation amount exceeded 1.0"
I have low confidence in the output based on the quality of the input data.
50% probability season end is August 28. 90% probability is October 7.

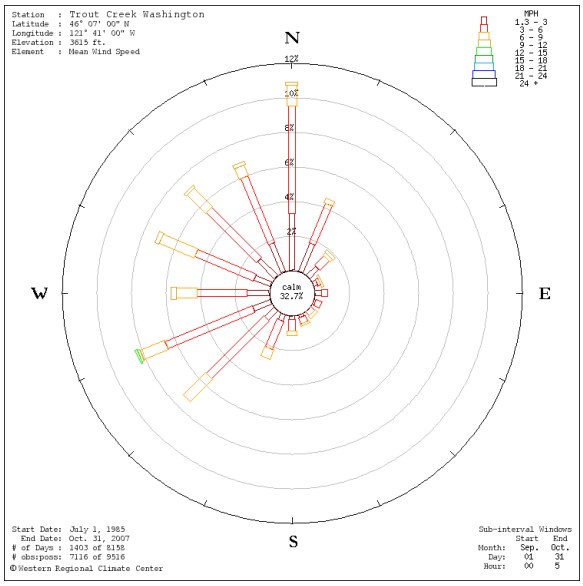


Wind Analysis

This analysis searches weather records for wind events that could support rapid fire movement through long range spotting. Three elements are involved 1) an ignition source, specifically lofted fire brands from group torching of conifers trees, 2) high wind speeds to carry fire brands to fuels outside the fire perimeter, 3) receptive and available fuel outside the control lines. Three wind scenarios have been identified that would provide the high wind speeds necessary to cause control problems; east wind events, marine push winds, dry cold front passages. This analysis focuses on two weather stations, Signal Peak 452307, 16 miles east of the fire on Yakama Reservation at 5052' elevation. Trout Creek 451917 is ten miles west of the fire at 3615 elevation on the Mt. Adams Ranger District.
We created wind rose graphes for August, September, and October, both 24 hour graphics and burn period (1000 hour to 1900 hours) graphics for both weather stations. Nighttime graphs during the month of October were also analyzed as we searched for east wind event episodes.

Based on review of the data from these two stations we found no compelling case for east wind events. We believe that the fire's location (southeast of Mt. Adams) protects it from classic east wind events. This does not mean the wind direction will not come from the east, but that the threshold values for wind speed and wind duration are not meet. Our conclusion is supported by previous analysis done in support of a Technical Fire Management project Fire Behavior and Wildland Fire Use in the Mt. Adams Wilderness.

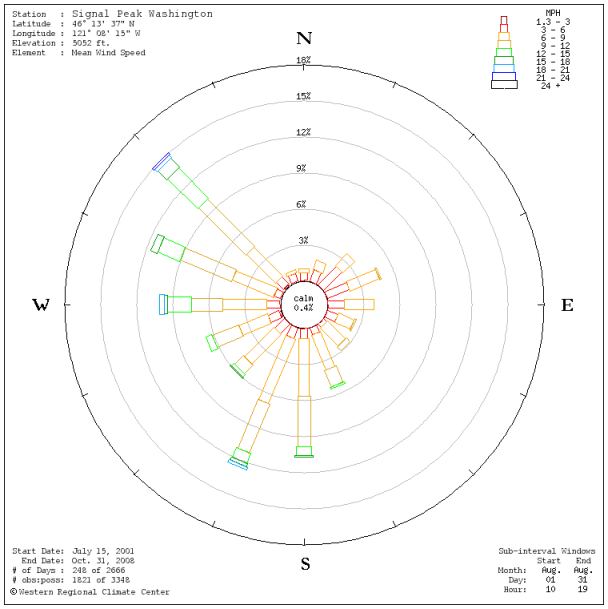
Trout Creek Station for the months of Sept. & Oct. for the early morning hours. 32% of the nighttime observations are calm winds. Wind direction of southwest to north predominate. Only a small percentage of the observations have an easterly component. The easterly wind observations are 9 mph or less.



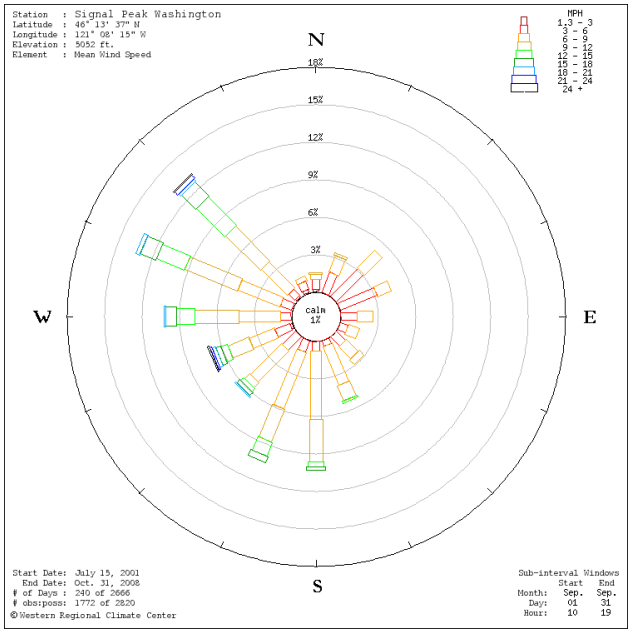
Marine push winds and dry cold front winds will be of greater concern from now to the end of October. The marine push has westerly component that would move the fire to the east further onto The Yakama Nation and Washington Department of Natural Resources protection. Cold front passages start with strong southerly winds that shift over time to southwest, west, and finally north. Cold front passages can be associated with modest to significant precipitation and these high wind speeds are evident in the data. Our concern is the dry cold front passages with higher wind speeds but no precipitation.

Signal Peak Station* August

This station best represents the fire area since it is in the same elevation band as the fire. Winds observations 24 hours per day. Only 2% of the observations are calm. Westerly and southwesterly winds are dominant. More than 40% of the wind observations are above 9 mph.
A wind rose created for the daytime burn period (1000hours to 1900 hours) would display the same pattern: little calm winds, westerly and southwestly winds dominate with wind speeds high enough to be problematic.
* Only 6 years of data were available for analysis from Western Region Climate Center.



We have concluded from the graphic below that there marine push winds and cold front passage winds in the data record. Wind speeds over 9 mph present themselves at least 39% of the time.



Signal Peak Station – September This graphic shows all of the September observations during the critical daytime period. There of few calm winds. Southerly to northwesterly winds are the dominant direction. The wind speeds can be categorized as slightly stronger than the August observations. The same pattern presents itself in the display of 24 hour observations. Wind speed >15mph occur in 7.4% of the observations.

Average wind speeds vary little during August, September, and October being 8.2, 8.3, and 8.8 miles per hour respectively during the burn period each day. Our fire behavior modeling discovered that 8 mph winds were adequate to carry lofted fire brands .1 mile, which is adequate to span the 300 foot mopped perimeter buffer. Asking the question, "what percentage of the time do wind speeds exceed 9 miles per hour?" Nine mph is used here because that is the closest break in the wind rose display. The hourly observations from Signal Peak exceed 9 mph 41% of the time in August, 39.2% in September, and 40.5% in October. Wind speeds over 15 mph occur 3.7% of the time in August. September presents a larger proportion of high wind speed at 7.4 of the time. October has wind speeds greater than 15 mph 12.3% of the time.

Appendix C: Communications Strategy

Objectives

1. Strengthen effective communication with media, local officials, partners and affected communities and landowners regarding current incident situation. (See identified audiences below)
2. Proactively inform and communicate with publics in Trout Lake, Glenwood, Husum, BZ Corners and Klickitat, Skamania, and Yakima counties regarding incident situation, especially management tactics and long-term smoke management from fire.
3. Utilize the wildland fire incident as an opportunity to deliver messages regarding forest health, wildland urban interface, cost containment, etc.
4. Facilitate effective communication between affected land management agencies and owners (USFS, WADNR, Yakama Nation, Hancock Timber) in regards to media, elected officials, and public outreach.

5. Identify and communicate important recreation openings and closures (Mt. Adams South Climb, Bird Creek Meadows/Tract D etc.)
6. Plan for long-term staffing of the Information function.

Partners and Public

- Communities and Community leaders
- Recreating public (climbers, chambers, others)
- Local and regional news media
- Yakama Nation
- Washington Department of Natural Resources
- Hancock Timber
- Elected officials (County Commissioners in Klickitat, Skamania, Yakima, Congressional Delegation, City Officials)
- Incident Commander and Agency Administrators
- Neighboring and affected landowners
- Contractors and Permittees
- Northwest Coordination Center Media Desk
- GPNF Employees
- Regional Offices
- Interest Groups (AFRC, GP Task Force, etc.)

Key Messages

- The Cold Springs fire is not 100% contained. Control lines have been established and the lines have been mopped up at least 300 feet in from the perimeter.
- The possibility remains that the fire could threaten the control lines due to the large amounts of dead trees and the amount of unburned fuel within the perimeter.
- The hottest and driest conditions will occur over the next few weeks.
- Approximately 150 fire personnel will continue to patrol the fire perimeter.
- The fire did not burn through all the grass, brush, and trees throughout the fire area. During this summer and fall, varying amounts of smoke will be visible, until the fire receives significant precipitation.
- The agencies developed a long-term fire management strategy that identifies management action points that will trigger actions, including an increase in firefighters to respond to any new flareups.

Tools

- Fire Management Updates (weekly or daily as needed)
- Email list (audiences identified above, weekly or daily as needed)
- Web page (Inciweb and/or GPNF Cold Springs Fire page)
- Trap Line (ongoing, see below)
- Community Meetings (identified but not scheduled, see below)
- Field Tours (identified but not scheduled, see below)
- Recorded information line (existing, see below)
- MTA Fire History document
- Gotchen EIS status update
- Cold Springs Fire Long-term Fire Management one-pager

Information Function Staffing

Anticipated Long-Term Management Fire Behavior: **Type 3 PIO** (with coordination with GPNF Public Affairs Officer, and MTA District Contact)

Management Action Point Trigger: **Two Type 2 IOs with Type 3 PIO** (with coordination with GPNF Public Affairs Officer, and MTA District Contact)

Strategies

Anticipated Long-Term Management Fire Behavior		
ACTION ITEM	**TIMING**	**RESPONSIBILITY**
One-page Cold Springs Fire Update (with map and including strategy, update, messages, etc.)	Weekly (or more if significant information occurs)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
Trap Line Postings	Weekly (or more if significant information occurs)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
Long-Term Cold Springs Fire News Release (Identifying anticipated actions, trigger points, Type 3 team in place)	At transition of Type 2 team to Type 3 team (additional news releases as needed)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
Cold Springs Fire Web Page (on GPNF and potentially INCIWEB)	At transition of Type 2 team to Type 3 team (ongoing updates)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
E-mail of link Cold Springs Fire update (to audiences identified above)	Weekly	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
Recorded Information Line	Weekly (associated with current GPNF Recreation Recorded Line)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
Community Meeting (Trout Lake, Glenwood)	Identified but not scheduled (Info group to discuss appropriateness)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)
Field Tour	Identified but not scheduled (to include congressional staffers, county commissioners, regional office)	Type 3 PIO (coordinating with GPNF Public Affairs Staff and MTA District Contact)

Management Action Point Trigger (in addition to items above)		
ACTION ITEM	**TIMING**	**RESPONSIBILITY**
Order two Type 2 IIOs	As identified in Appendix B	As identified in Appendix __
News Release	Immediately (as needed for	Type 2 IOF2 with GPNF PAO

	updates)	support
Reestablish Cold Springs Fire Information Line	In place and available for IIOs	MTA District with GPNF PAO support
Daily Trap Line Postings	Daily	Type 2 IOF2
Contact local reporters (updating them on incident)	Daily	Type 2 IOF2
Updates of GPNF web and Inciweb pages	Daily	Type 2 IOF2 and GPNF PAO
Elected Official, Community Leader, Interest Group communication strategy	Immediate and ongoing	Type 2 IOF2 and GPNF PAO

Contacts:

Chris Strebig, GPNF Public Affairs Officer
GPNF Forest Headquarters, 10600 NE 51st Circle, Vancouver, WA 98682
Email: cstrebig@fs.fed.us
Work Phone: 360-891-5005
Work Cell: 360-901-2131
Home Cell: 503-708-3515

Roger Peterson, GPNF Public Affairs Information Assistant
GPNF Forest Headquarters, 10600 NE 51st Circle, Vancouver, WA 98682
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Work Phone: 360-891-5007
Home Cell: 360-713-1412

Mount Adams Ranger District contact (TBD)
Email:
Work Phone:
Home Cell:

Type 3 Team contact (TBD)
Email:
Work Phone:
Home Cell:

Appendix D: Proposed Team Organization

Overhead (27 personnel)

COMMAND	OPERATIONS	PLANNING	LOGISTICS	FINANCE
1 ICT3 w/trainee	1 DIVS (Ops)	1 RSUL	1 LSC (T2)	1 CSUL
1 SOF (T2 or 3)	1 HEBM	2 Palm IR	1 BCMG	1 TIME
1 PAO	2 TFL	2 FOBS	3 EMT	
	2 STLE		2 SEC2	
	2 STLC			
	1 FALB			
	1 DOZB			
3	**10**	**5**	**7**	**2**

Suppression Resources (125 approximately):

AVIATION
1 Type 2 helicopter w/module
1 Type 3 helicopter w/module

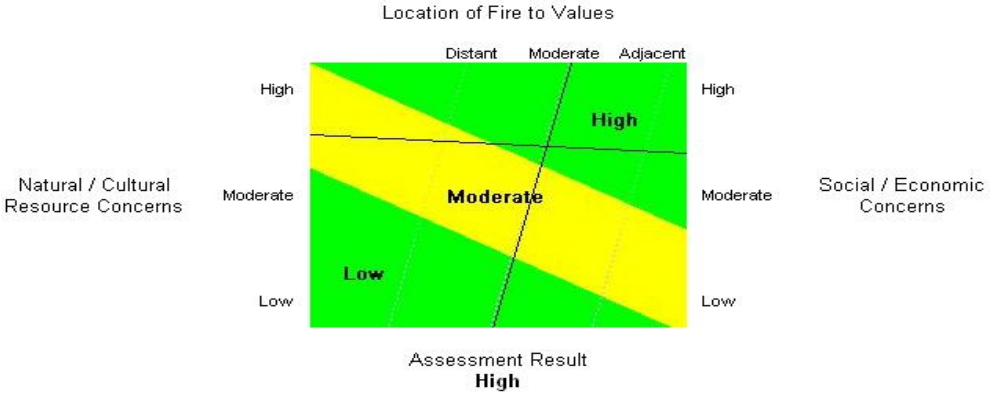
GROUND
4 Type 2 hand crews
2 Strike team engines (T3, 4 or 6)
2Water tenders
1 T2 dozers
2 Fallers

Reference the Central Oregon IMT's transition plan for additional information on ICP and supporting equipment in Base Camp.

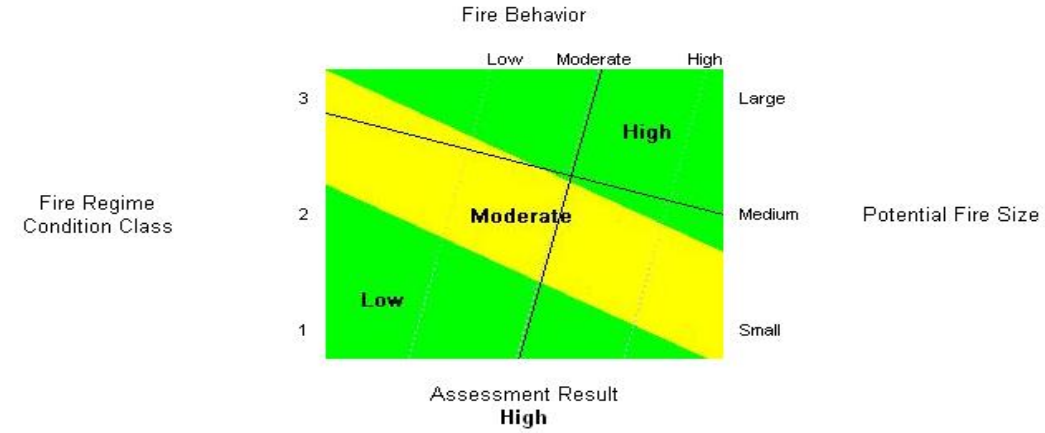
Appendix E: Risk Assesment

Wildland Fire Relative Risk Assessment
Step 1. Determining Values

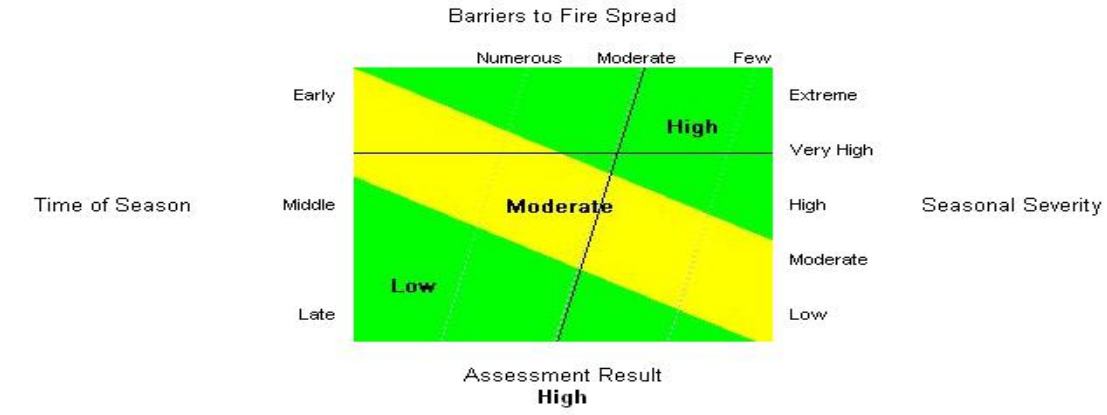
Step 1. Determining Values



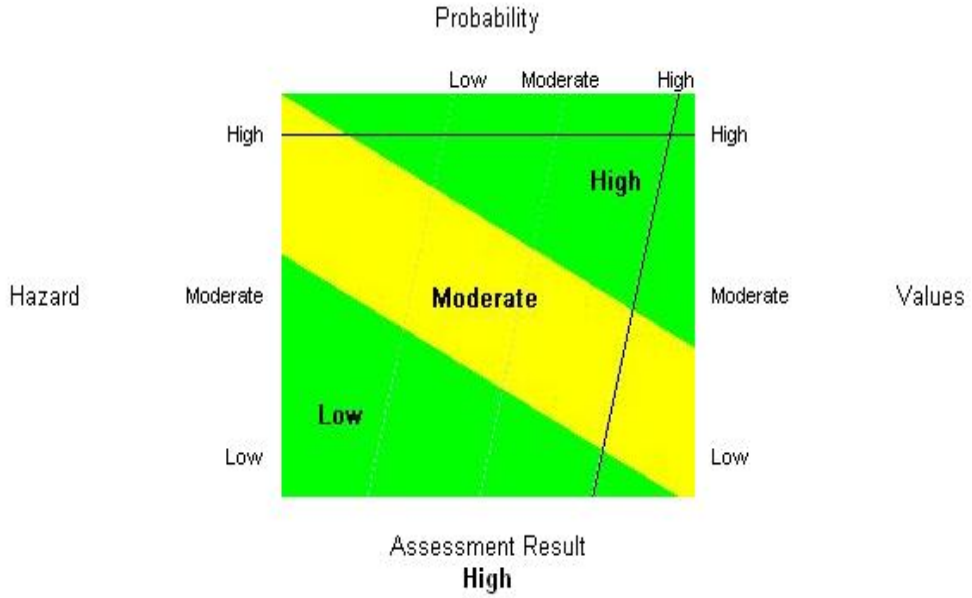
Step 2. Determining Hazard



Step 3. Determining Probability



Step 4. Determining Wildland Fire Relative Risk



Appendix F

Fire History and Ecological Analysis for Long Term Planning and Public Information on the Cold Springs Incident

Gifford Pinchot National Forest
Mt. Adams Ranger District
July 2008

Prepared by Jessica Hudec

Fire Background

The Cold Springs Fire on the south side of Mt. Adams and the eastern portion of the Mt. Adams Ranger District was caused by a lightning storm on June 29, 2008 and reported on July 12, 2008 around 1900. Crews were withheld from responding until the following morning due to a heavy concentration of snags in the area and the desire to avoid these hazards in country not seen in daylight. Fire personnel responded to the fire on July 13, 2008 and arrived on scene at 0700 at which time the fire was approximately 4 acres in size. Hot, dry conditions, low fuel moistures in the 100-hour, 1000-hour, and live fuel categories, and transport winds contributed to rapid fire growth throughout the first 36 hours of the incident and moderate growth in the following 24 hours. Fire behavior calmed down after the third day, by which time the fire reached nearly 8,000 acres in size. The burn area encompasses land owned by the US Forest Service, Yakama Indian Reservation, and the Washington Department of Natural Resources (DNR).

Historical and Current Conditions

Lightning caused fires are not an uncommon occurrence in the area of the Cascade crest. Prior to European settlement, it was these fires that shaped the successional dynamics of the landscape in grand fir (*Abies grandis)* forests in the area, including the site of the Cold Springs Fire. Low intensity surface fires encouraged dominance by ponderosa pine *(Pinus ponderosa),* Western larch *(Larix occidentalis),* and Douglas-fir *(Pseudotsuga menzesii)* (Arno et al. 1985). These species are considered fire resistant, and the thick bark of Douglas-fir and ponderosa pine insulate the tree's cambium, the region of tree diameter growth, against damage by lower intensity fires. A recurrence of low to moderate intensity fires increases the dominance of these fire resistant trees relative to thinner barked grand fir and other true firs and lodgepole pine which are readily killed by fire.

Significant changes to forest structure and composition have occurred since European settlement and the introduction of the era of fire suppression, the presence of Douglas-fir and ponderosa pine as the most dominant overstory species provides insight to the important role these trees played in historical stand development. The current unhealthy forest conditions, resulting from both a century of fire suppression and extensive selective harvesting of large old growth ponderosa pine during the 1940s through the 1970s, vary greatly from those historically present. Existing vegetation is shifting from the fire resistant to types to less fire tolerant species and the challenge to living with fire in a manageable fashion has become increasingly complex.

In addition to simply and increased number of trees over the landscape, the composition and structure of this area of the forest has made it vulnerable to attack by Western spruce budworm (*Choristoneura occidentalis)* epidemics of the past couple decades. The first budworm outbreak occurred in 1985, and the eastern portion of the Mt. Adams Ranger District known as Gotchen has been repeatedly hit. Fire suppression allowed the establishment of multi-storied stands of grand fir, a favorite host to the budworm. Douglas fir as also been affected by the budworm, which weakens the trees and leaves them susceptible to lethal diseases like *annosus* root rot *(Heterobaidion annosum* formerly *Fomes annosus)* and laminated root rot *(Phellinus weirii).* The result of this process is large pockets of dead and dying trees with increasing concentrations of snags and ground, surface, and ladder fuels as larger trees die and fall and entire thickets of smaller grand fir are left as standing dead matchbooks.

The fire return interval for the fire area, which primarily falls into the higher elevation grand fir zone where subalpine fir (*Abies lasiocarpa)* is one of the climax species, is 25-75 years for intermediate intensity fires and 140-340 years for stand replacement fires (Barrett 1991). Lower elevations experience slightly shorter return intervals. Burn areas vary greatly in size, oftentimes overlapping to great a mosaic on the landscape of various age and successional classes. The lack of fire in the area has resulted in stands in the Fire Regime Condition Class (FRCC) II category. This means that the land has missed one fire cycle. So, if historically there is an intermediate intensity fire every 75 years and it has been 100 years since fire occurred, the forest has missed one cycle. After 150 years, it will have missed 2 cycles and been in an FRCC III. There are many portions on the east side of the Mt. Adams Ranger District that fall into the FRCC II category temporally but behave more like an FRCC III when they burn due to the heavy accumulation of dead and down material as well as the successional acceleration resulting from selective harvests.

Though typically suppressed when they are small, fires are frequent to the area. The Gifford Pinchot National Forest has experienced 28 large fires (over 50 acres) since 1970. The Cold Springs Incident will be the 29th and largest fire in that time period. Of those, 10, or about 30% of the fires occurred before August 1. Ecologically speaking, fire succession needs to be looked at on a longer time scale, particularly due to fire suppression efforts over the past century. The Gifford Pinchot National Forest has experienced many substantial burns both from natural ignition as well as escaped slash burning since the turn of the 20th century. The largest of these fires follow:

- Yacolt Fire 1902: 238,928 acres with at least 16 reburns between 1910 and 1924 as well as the 48,000 acre Rock Creek Fire of 1927 and the 208,000 acre Dole Fire of 1929.
- Lewis River Fire 1902: 89,065 acres
- Cispus Fire 1902: 72,904 acres and reburn in 1918
- Siouxon Fire 1902: 39,520 acres
- Washougal Fire 1918: 22,822 acres
- Skamania Fire 1952: 14,269 acres
- Association Fire 1919: 12,800 acres
- Jack Mountain Fire 1917: 10,763 acres
- Clark Timber Co. Fire 1922: 10,021 acres

After several reburns of the Yacolt fire, the Columbia National Forest (the name of the current Gifford Pinchot National Forest at the time) was locally dubbed as the "Columbia National Burn". In more recent history, the three large fires that the Mt. Adams Ranger District has experienced since 2000 have all occurred on the east side of the district near Mt. Adams. The Salt Creek Fire of 2001 (318 acres) was about three miles northwest of the Cold Springs Fire origin in the Mt. Adams Wilderness, while the McDonald Fire of 2004 (80 acres) was less than a mile away. These smaller incidents, though large compared to other local fires over the past few decades, were indicators of the potential for a large fire like Cold Springs. Thus, though Cold Springs is the largest fire experienced in the area in quite awhile, it was ecologically anticipated based on the standard fire return interval and is within the size realm of a typical large, stand-replacing fire.

Activities for Fuel and Hazard Mitigation

A need was identified in the Final Environmental Impact Statement (FEIS) for the Gotchen Risk Reduction and Restoration Project (2003) to reduce hazardous fuels, alter forest composition and structure to conditions less favorable to sustaining the spruce budworm, and minimize the decline and loss of suitable habitat for the Northern spotted owl (*Strix occidentalis caurina)* in the Gotchen Late Successional Reserve (LSR). Since the signing of the document, the Stray Cat Stewardship contract was awarded in 2005, which offers an exchange of goods (timber) for services on the matrix lands within the assessment area on the far eastern portion of the Mt. Adams Ranger District. The contract will be completed in 2008, with a total treatment area of about 620 acres. Fuels reduction and aspen restoration projects are also occurring in portions of the Gotchen LSR, which adds approximately 800 more acres to lands treated. These projects are intended to improve forest health by replacing much of the grand fir component with budworm-resistant pine, reduce fuels by thinning understory thickets and standing dead trees, create fuel breaks to reduce the threat of wildfire spread particularly to the town of Trout Lake, WA and more intensely managed neighboring lands owned by the DNR and Yakima Indian Reservation, and gradually reintroduce fire into the area.

The town of Trout Lake recently completed a Community Wildfire Protection Plan (CWPP) for which they received implementation funding from the National Fire Plan. A fuels reduction team was organized to work in conjunction with the Northwest Service Academy and the Mt. Adams Resource Stewards to aid local homeowners in increasing and improving the defensible space around their homes in the wildland urban interface.

In addition to the Gotchen FEIS and resultant projects, the Gifford Pinchot National Forest has specialists working to develop a Wildland Fire Use Plan for wilderness areas. Under this plan, naturally occurring fires (not human-caused) would be allowed to burn in certain areas and under specific environmental conditions that would not be threatening to the public or other land management objectives as a way to implement the growing ecological understanding of the natural and necessary role fire plays in healthy forest dynamics.

Future Actions and Expectations

The Cold Springs Fire will continue to burn in the interior until the fall rains begin and the snow falls this winter. Areas around the fire perimeter will be "100% mopped-up" or completely extinguished 300 feet into the interior to reduce the potential for embers to be blown and create spot fires outside the fire perimeter when hot and dry conditions arise. Mop-up will not extend further interior due to high concentrations of snags and the threat they pose to firefighter safety. There will continue to be occasional smoke inversions in the valleys overnight under stable atmospheric conditions as well and are not cause for alarm. Fire crews will be assigned to the fire until the first significant rain event in the fall. These crews will work to complete the mop-up of the fire perimeter, monitor the fire daily, reduce hazard trees primarily near trails and roads that have partially burned and are left dead and standing with potential to fall, and eventually rehabilitate the area. Rehab includes filling in and covering fire lines, facilitating water drainage, and various other tasks to help speed the recovery and revegetation of the burn area while protecting water resources and reducing the potential for erosion. Conditions typical to large fire spread that often occur in the fall include hot and dry conditions with strong east winds. By that time, any remaining smoke will be in the far interior of the fire with little escape threat.

The Gifford Pinchot National Forest and partners will continue working toward fuels reduction and restoration, particularly in the Gotchen area, and community members will persist in the implementation of their CWPP. Studies are also being planned to monitor post-burn ecological succession and dynamics, and the burn area will serve as a fuel break to future fires in the area.

References

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Appendix G

Worst Case Scenario Planning
Cold Springs Fire
Yakama Indian Nation

Recommendations from the Cold Springs Long Term Planning Team

The potential for the Cold Springs Fire to continue spreading onto Yakama lands is a very real possibility. Mortality from the spruce bud worm has created the ideal environment for rapid fire growth in sub-alpine fir stands. The Cold Springs Long Term Planning Team recommends that the Yakama Nation begins pre-planning for a large fire scenario. The pre-planning should not only consider the Cold Springs Fire but new fire starts near Mt Adams that could impact the Nation.

The following list of items will allow the Nation to rapidly respond to an escaped fire on Mt Adams.

1. Leader's Intent in the form of an in-briefing packet (reference the BIA Blue Book or the Interagency Red Book for a template).
2. Potential locations of an ICP that can manage 1000 firefighters.
3. Current and past management activities that could check, delay or modify fire spread.
4. Cultural sites that will be adversely impacted by fire.
5. Threatened and Endangered species locations and habitat concerns.
6. A draft Delegation of Authority to an IMT.
7. Technology aids such as Fire Spread Probability (FSPRO) and Rapid Values at Risk Assessment (RAVAR).
8. Updated map products with roads, trails, etc.
9. Fire behavior calculations under standard July/August conditions.
10. Subject matter experts to aid in planning.
11. Communication plan to Tribal members on the fire hazard.
12. Evacuation routes and emergency planning products.

The development of these products will not prevent a major fire but they will help prepare the Nation's response to a fire.

Appendix H: Cost Data (attached)